1. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-11x^2 - 9x + 4 = 0$$

A. $x_1 \in [-1.28, -1.09]$ and $x_2 \in [-0.5, 0.7]$

B. $x_1 \in [-3.72, -3.35]$ and $x_2 \in [12, 14.5]$

C. $x_1 \in [-0.89, 0.42]$ and $x_2 \in [1.1, 2.7]$

D. $x_1 \in [-16.89, -16.06]$ and $x_2 \in [15.5, 16.3]$

E. There are no Real solutions.

---

2. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$16x^2 + 24x + 9$$

A. $a \in [1.76, 2.61], \quad b \in [0, 4], \quad c \in [7.67, 8.57], \text{ and } \quad d \in [0, 7]$

B. $a \in [0.23, 1.18], \quad b \in [9, 17], \quad c \in [0.55, 1.74], \text{ and } \quad d \in [10, 15]$

C. $a \in [6.8, 8.12], \quad b \in [0, 4], \quad c \in [1.38, 2.63], \text{ and } \quad d \in [0, 7]$

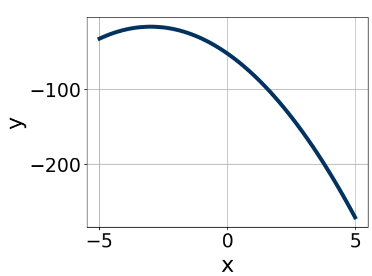
D. $a \in [3.19, 5.11], \quad b \in [0, 4], \quad c \in [3.7, 4.25], \text{ and } \quad d \in [0, 7]$

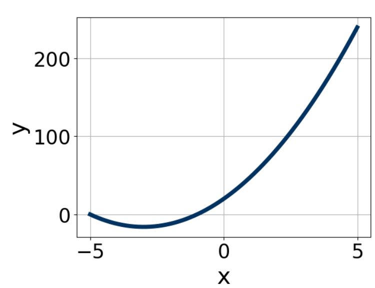
E. None of the above.

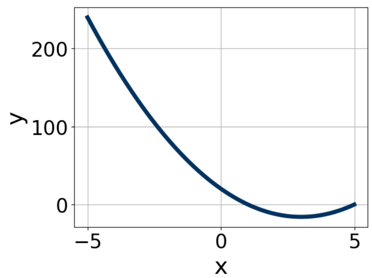
---

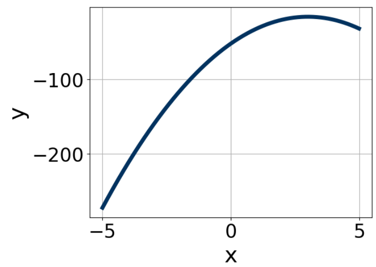
3. Graph the equation below.

$$f(x) = (x - 3)^2 - 16$$

A. 

B. 

C. 

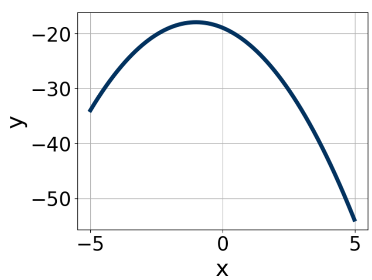
D. 

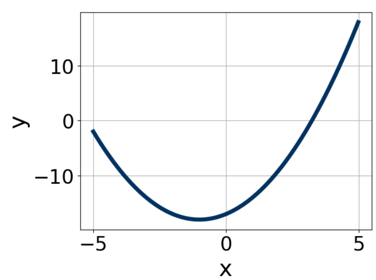
E. None of the above.

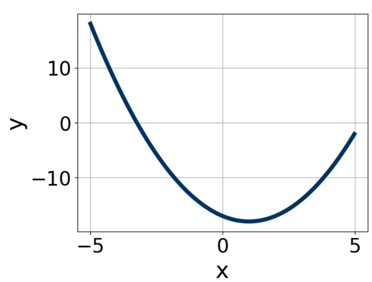
---

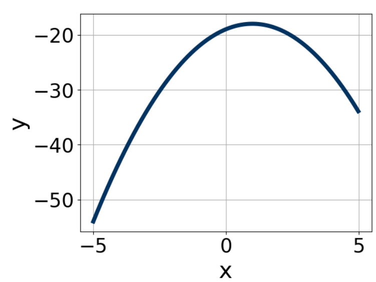
4. Graph the equation below.

$$f(x) = (x+1)^2 - 18$$

A. 

C. 

B. 

D. 

E. None of the above.

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$14x^2 - 14x - 9 = 0$$

A. $x_1 \in [-0.71, -0.11]$ and $x_2 \in [1.1, 4.1]$

B. $x_1 \in [-6.29, -5.55]$ and $x_2 \in [18.1, 21.6]$

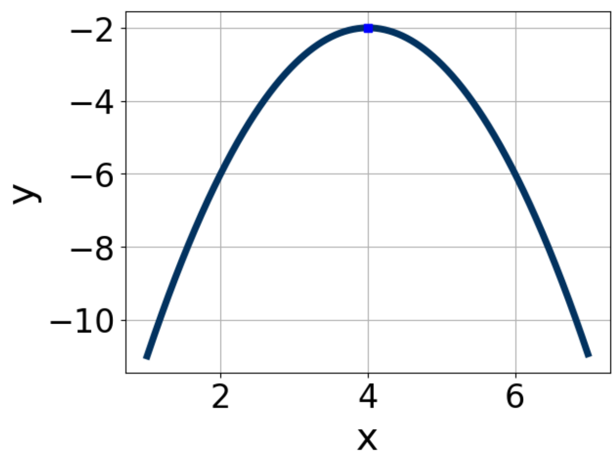
C. $x_1 \in [-26.62, -25.55]$ and $x_2 \in [23.9, 28.9]$

D. $x_1 \in [-2.38, -1.09]$ and $x_2 \in [-1.1, 0.9]$

E. There are no Real solutions.

---

6. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-0.2, 2.2], \quad b \in [8, 12], \text{ and } \quad c \in [14, 16]$

B. $a \in [-0.2, 2.2], \quad b \in [-9, -7], \text{ and } \quad c \in [14, 16]$

C. $a \in [-1.6, 0.9], \quad b \in [-9, -7], \text{ and } \quad c \in [-18, -17]$

D. $a \in [-1.6, 0.9], \quad b \in [-9, -7], \text{ and } \quad c \in [-16, -9]$

E. $a \in [-1.6, 0.9], \quad b \in [8, 12], \text{ and } \quad c \in [-18, -17]$

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 65x + 36 = 0$$

A. $x_1 \in [-9.06, -8.32]$ and $x_2 \in [-0.18, -0.1]$

B. $x_1 \in [-2.41, -1.75]$ and $x_2 \in [-0.83, -0.78]$

C. $x_1 \in [-45.56, -44.72]$ and $x_2 \in [-20.11, -19.97]$

D. $x_1 \in [-5.64, -5.34]$ and $x_2 \in [-0.28, -0.2]$

E. $x_1 \in [-1.79, -1.48]$ and $x_2 \in [-0.93, -0.87]$

---

8. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [4.1, 7.1], \quad b \in [-13, 3], \quad c \in [4.6, 6.4], \text{ and } \quad d \in [-10, -3]$

B. $a \in [10.6, 13], \quad b \in [-13, 3], \quad c \in [1.7, 3.5], \text{ and } \quad d \in [-10, -3]$

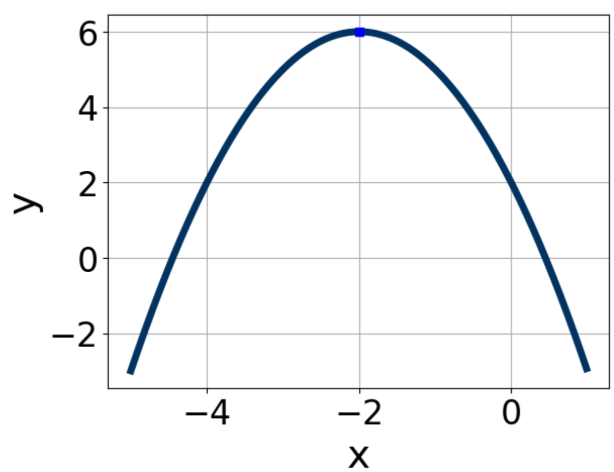
C. $a \in [-2.1, 1.1], \quad b \in [-31, -25], \quad c \in [0, 2.2], \text{ and } \quad d \in [-30, -24]$

D. $a \in [2, 3.3], \quad b \in [-13, 3], \quad c \in [10.4, 14.2], \text{ and } \quad d \in [-10, -3]$

E. None of the above.

---

9. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [0, 4], \quad b \in [-6, -2], \text{ and } \quad c \in [8, 11]$

B. $a \in [-3, 0], \quad b \in [4, 6], \text{ and } \quad c \in [-11, -7]$

C. $a \in [-3, 0], \quad b \in [4, 6], \text{ and } \quad c \in [0, 5]$

D. $a \in [0, 4], \quad b \in [4, 6], \text{ and } \quad c \in [8, 11]$

E. $a \in [-3, 0], \quad b \in [-6, -2], \text{ and } \quad c \in [0, 5]$

---

10. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 7x - 36 = 0$$

A. $x_1 \in [-1.4, 0.26]$ and $x_2 \in [3.9, 4.44]$

B. $x_1 \in [-27.42, -25.33]$ and $x_2 \in [19.3, 20.36]$

C. $x_1 \in [-2.55, -0.86]$ and $x_2 \in [1.33, 1.38]$

D. $x_1 \in [-9.22, -8.23]$ and $x_2 \in [-0.64, 0.39]$

E. $x_1 \in [-4.63, -2.83]$ and $x_2 \in [0.31, 1.16]$

---

11. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$19x^2 + 11x - 9 = 0$$

A. $x_1 \in [-0.6, -0.08]$ and $x_2 \in [0.9, 1.11]$

B. $x_1 \in [-1.65, -0.82]$ and $x_2 \in [0.27, 0.99]$

C. $x_1 \in [-20.06, -18.74]$ and $x_2 \in [8.64, 8.73]$

D. $x_1 \in [-28.81, -27.69]$ and $x_2 \in [27.6, 28.12]$

E. There are no Real solutions.

---

12. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 + 38x + 15$$

A. $a \in [0.6, 1.5], \quad b \in [11, 20], \quad c \in [0.4, 2.5], \text{ and } \quad d \in [16, 27]$

B. $a \in [3.6, 7.6], \quad b \in [0, 7], \quad c \in [4.5, 8.6], \text{ and } \quad d \in [3, 7]$

C. $a \in [0.6, 1.5], \quad b \in [0, 7], \quad c \in [17.3, 20.6], \text{ and } \quad d \in [3, 7]$

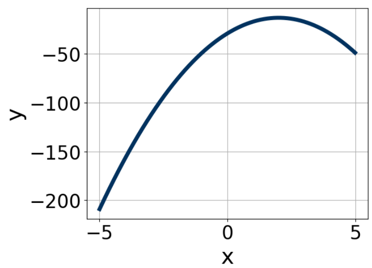
D. $a \in [7.3, 10], \quad b \in [0, 7], \quad c \in [2.1, 4.4], \text{ and } \quad d \in [3, 7]$

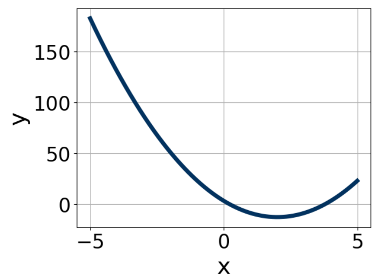
E. None of the above.

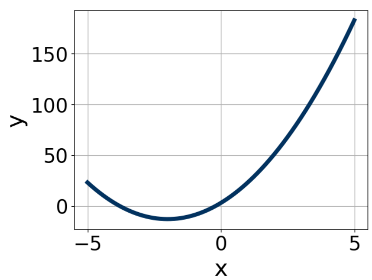
---

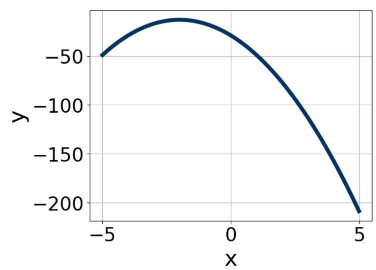
13. Graph the equation below.

$$f(x) = (x+2)^2 - 13$$

A. 

C. 

B. 

D. 

E. None of the above.

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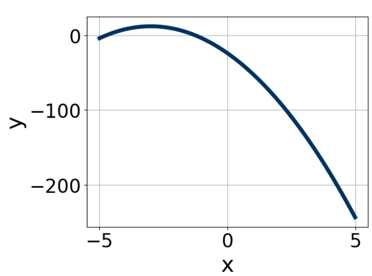
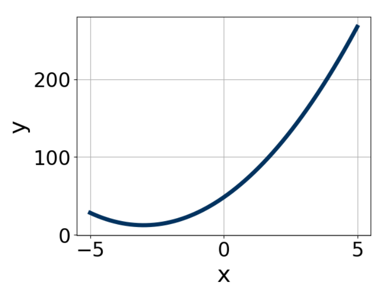
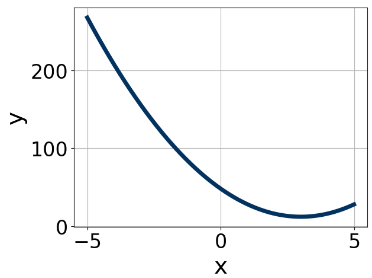
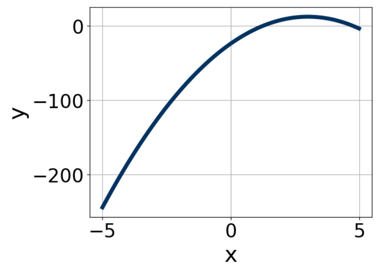
14. Graph the equation below.

$$f(x) = -(x-3)^2 + 12$$

A. 

B. 

C. 

D. 

E. None of the above.

---

15. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-18x^2 + 8x + 4 = 0$$

A. $x_1 \in [-0.34, -0.07]$ and $x_2 \in [0.6, 1.3]$

B. $x_1 \in [-0.94, -0.35]$ and $x_2 \in [-0.6, 0.5]$

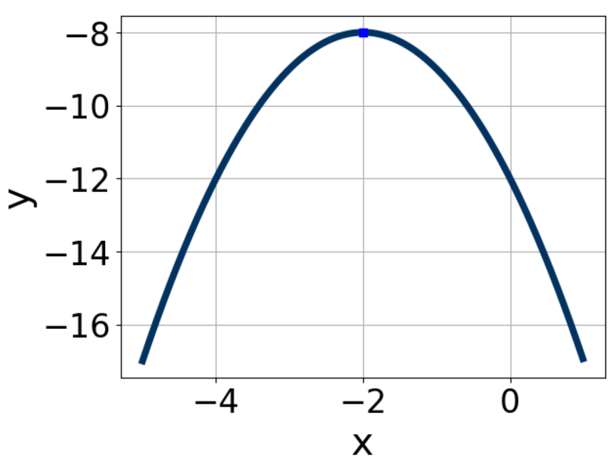
C. $x_1 \in [-18.95, -18.48]$ and $x_2 \in [18.1, 20.6]$

D. $x_1 \in [-13.41, -13.24]$ and $x_2 \in [3.9, 5.9]$

E. There are no Real solutions.

---

16. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-0.1, 1.6], \quad b \in [-7, -3], \text{ and } \quad c \in [-4, -1]$

B. $a \in [-0.1, 1.6], \quad b \in [3, 5], \text{ and } \quad c \in [-4, -1]$

C. $a \in [-2.3, 0.7], \quad b \in [3, 5], \text{ and } \quad c \in [1, 6]$

D. $a \in [-2.3, 0.7], \quad b \in [-7, -3], \text{ and } \quad c \in [-12, -11]$

E. $a \in [-2.3, 0.7], \quad b \in [3, 5], \text{ and } \quad c \in [-12, -11]$

---

17. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [0.37, 0.5]$ and $x_2 \in [3.1, 5]$

B. $x_1 \in [29.95, 30.06]$ and $x_2 \in [28.7, 31.3]$

C. $x_1 \in [1.1, 1.58]$ and $x_2 \in [0.5, 1.8]$

D. $x_1 \in [0.08, 0.26]$ and $x_2 \in [3.9, 7.1]$

E. $x_1 \in [0.5, 0.95]$ and $x_2 \in [1.9, 3.4]$

---

18. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [0, 1.08], \quad b \in [-31, -27], \quad c \in [0.5, 1.4], \text{ and } \quad d \in [-38, -28]$

B. $a \in [1.67, 3.14], \quad b \in [-8, -1], \quad c \in [9.1, 14.6], \text{ and } \quad d \in [-10, -3]$

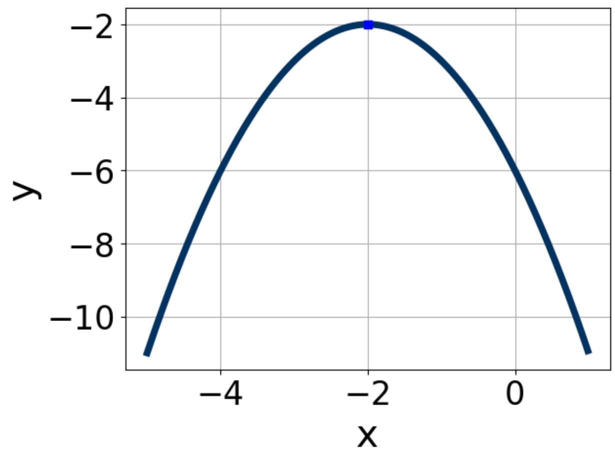
C. $a \in [11.14, 12.1], \quad b \in [-8, -1], \quad c \in [2.6, 4.8], \text{ and } \quad d \in [-10, -3]$

D. $a \in [5.24, 6.79], \quad b \in [-8, -1], \quad c \in [3.7, 6.9], \text{ and } \quad d \in [-10, -3]$

E. None of the above.

---

19. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0], \quad b \in [1, 7], \text{ and } \quad c \in [-7, -4]$

B. $a \in [1, 4], \quad b \in [-6, -3], \text{ and } \quad c \in [0, 5]$

C. $a \in [-2, 0], \quad b \in [-6, -3], \text{ and } \quad c \in [-7, -4]$

D. $a \in [-2, 0], \quad b \in [1, 7], \text{ and } \quad c \in [-2, 1]$

E. $a \in [1, 4], \quad b \in [1, 7], \text{ and } \quad c \in [0, 5]$

---

20. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 15x - 54 = 0$$

A. $x_1 \in [-10.2, -8.91]$ and $x_2 \in [0.11, 0.33]$

B. $x_1 \in [-2.15, -0.9]$ and $x_2 \in [1.08, 2.44]$

C. $x_1 \in [-0.74, -0.47]$ and $x_2 \in [3.46, 4.1]$

D. $x_1 \in [-45.52, -42.96]$ and $x_2 \in [29.47, 30.44]$

E. $x_1 \in [-7.12, -4.54]$ and $x_2 \in [0.33, 0.57]$

---

21. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-13x^2 + 9x + 5 = 0$$

A. $x_1 \in [-14.4, -11.6]$ and $x_2 \in [3.7, 6.6]$

B. $x_1 \in [-2.9, -0.7]$ and $x_2 \in [-0.8, 0.7]$

C. $x_1 \in [-0.9, 0.2]$ and $x_2 \in [0.9, 2.7]$

D. $x_1 \in [-18.2, -17.8]$ and $x_2 \in [16.8, 20.5]$

E. There are no Real solutions.

---

22. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d)$; $b \leq d$.

$$81x^2 - 81x + 20$$

A. $a \in [25.5, 30.5], \quad b \in [-10, 0], \quad c \in [2.3, 5],$ and $\quad d \in [-8, -2]$

B. $a \in [8.6, 10.5], \quad b \in [-10, 0], \quad c \in [8.6, 10.9],$ and $\quad d \in [-8, -2]$

C. $a \in [2.7, 4.5], \quad b \in [-10, 0], \quad c \in [26.3, 29.7],$ and $\quad d \in [-8, -2]$

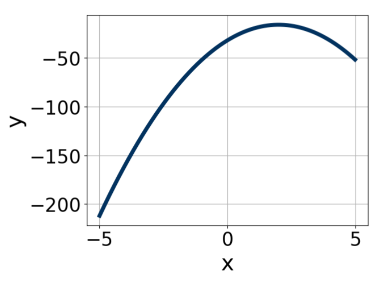
D. $a \in [0.7, 2.2], \quad b \in [-51, -44], \quad c \in [-2.6, 2.1],$ and $\quad d \in [-38, -33]$

E. None of the above.

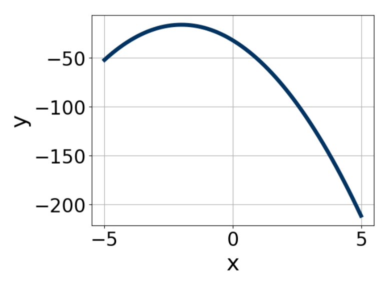
---

23. Graph the equation below.

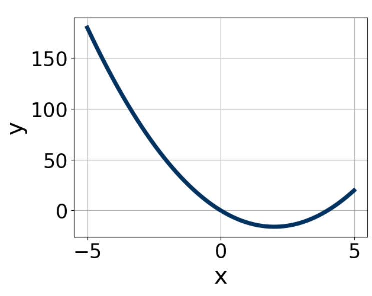
$$f(x) = -(x+2)^2 - 16$$



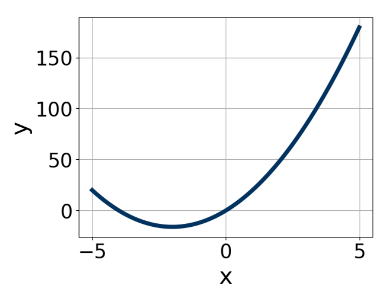
A.



C.



B.



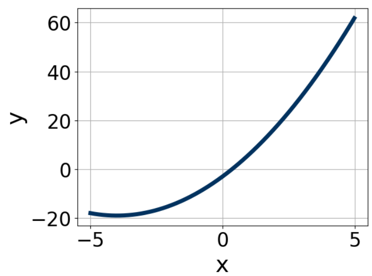
D.

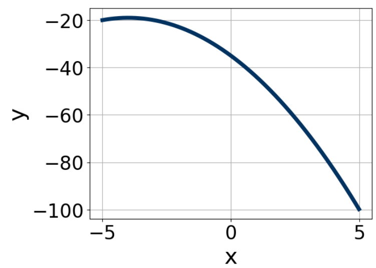
E. None of the above.

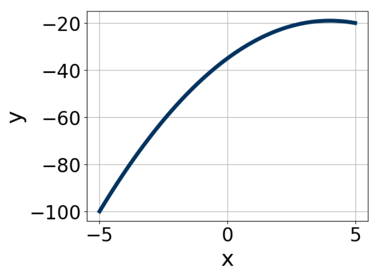
---

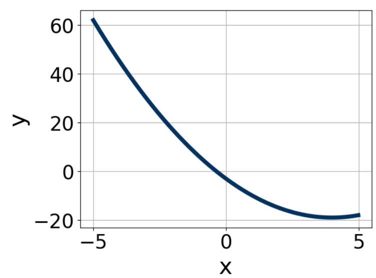
24. Graph the equation below.

$$f(x) = -(x+4)^2 - 19$$

A. 

C. 

B. 

D. 

E. None of the above.

---

25. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-14x^2 - 12x + 7 = 0$$

A. $x_1 \in [-6.23, -5.12]$ and $x_2 \in [16.63, 17.76]$

B. $x_1 \in [-1.75, -0.87]$ and $x_2 \in [0.18, 0.63]$

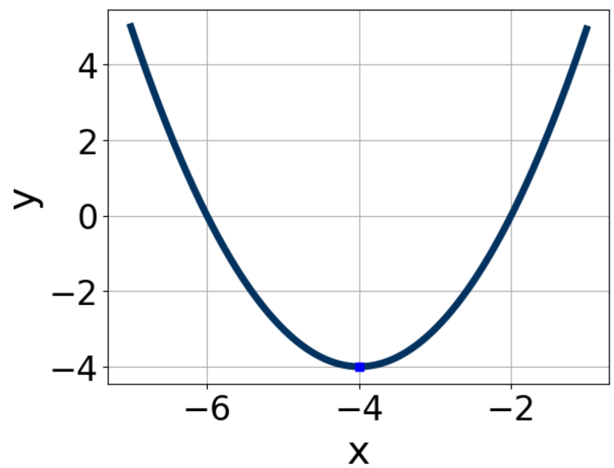
C. $x_1 \in [-24.6, -23.16]$ and $x_2 \in [22.45, 24.24]$

D. $x_1 \in [-0.6, 0.01]$ and $x_2 \in [1.13, 1.46]$

E. There are no Real solutions.

---

26. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-1.1, 0.1], \quad b \in [-12, -5], \text{ and } \quad c \in [-22, -19]$

B. $a \in [0.5, 1.2], \quad b \in [6, 9], \text{ and } \quad c \in [9, 13]$

C. $a \in [-1.1, 0.1], \quad b \in [6, 9], \text{ and } \quad c \in [-22, -19]$

D. $a \in [0.5, 1.2], \quad b \in [-12, -5], \text{ and } \quad c \in [9, 13]$

E. $a \in [0.5, 1.2], \quad b \in [-12, -5], \text{ and } \quad c \in [20, 22]$

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27. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 47x + 36 = 0$$

A. $x_1 \in [-13, -7.5]$ and $x_2 \in [-0.44, -0.12]$

B. $x_1 \in [-29.6, -26.2]$ and $x_2 \in [-20.19, -19.93]$

C. $x_1 \in [-2.2, 1.8]$ and $x_2 \in [-1.53, -1.1]$

D. $x_1 \in [-4.6, -2.5]$ and $x_2 \in [-1.03, -0.78]$

E. $x_1 \in [-7.8, -3.4]$ and $x_2 \in [-0.49, -0.4]$

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28. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$36x^2 + 60x + 25$$

A. $a \in [10.5, 12.4], \quad b \in [4, 7], \quad c \in [2.19, 3.64]$, and $\quad d \in [1, 7]$

B. $a \in [1.7, 5.9], \quad b \in [4, 7], \quad c \in [15.97, 19.02]$, and $\quad d \in [1, 7]$

C. $a \in [0.9, 1.1], \quad b \in [27, 35], \quad c \in [0.58, 2.46]$, and $\quad d \in [25, 33]$

D. $a \in [3.9, 6.8], \quad b \in [4, 7], \quad c \in [5.92, 6.33]$, and $\quad d \in [1, 7]$

E. None of the above.

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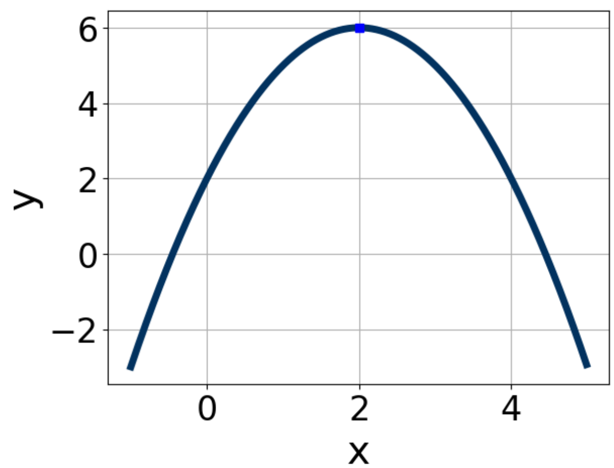
29. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.8, 2.5], \quad b \in [-4, -1]$, and $\quad c \in [10, 13]$

B. $a \in [-1.3, -0.7], \quad b \in [2, 6]$, and $\quad c \in [0, 3]$

C. $a \in [0.8, 2.5], \quad b \in [2, 6]$, and $\quad c \in [10, 13]$

D. $a \in [-1.3, -0.7], \quad b \in [-4, -1]$, and $\quad c \in [0, 3]$

E. $a \in [-1.3, -0.7], \quad b \in [-4, -1]$, and $\quad c \in [-12, -8]$

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30. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 15x - 54 = 0$$

A. $x_1 \in [-6.39, -4.49]$ and $x_2 \in [0.33, 0.4]$

B. $x_1 \in [-30.32, -28.53]$ and $x_2 \in [44.96, 45.11]$

C. $x_1 \in [-0.41, 0.46]$ and $x_2 \in [5.38, 5.41]$

D. $x_1 \in [-1.92, -0.86]$ and $x_2 \in [1.7, 1.91]$

E. $x_1 \in [-4.03, -2.02]$ and $x_2 \in [0.49, 0.71]$